

**Response under 37 C.F.R. 1.116
- Expedited Examining Procedure -
Examining Group 1772**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Ronald S. Cok

CONDUCTIVE COLOR FILTERS

Serial No. 10/676,656

Filed 01 October 2003

Group Art Unit: 1772

Examiner: Sow Fun Hon

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Valerie J. Richardson
Valerie J. Richardson
October 19, 2005
Date

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

Pre-Appeal Brief Request for Review

Applicants request review of the final rejection mailed July 19, 2005 in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested based on the following Arguments.

Arguments

Claims 1-31 are pending in the present application. Claims 25-31 have been withdrawn from consideration. Claims 1-14, 16, and 18-24 have been rejected. Claims 15 and 17 are indicated as allowable subject matter. (Note: Office Action Summary cover page mailed July 19, 2005 indicates claims 1-24 are rejected, but claims 15 and 17 are not included in any stated grounds of rejection, and rather are indicated as allowable subject matter as indicated above.)

Claims 1-10, 20, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsu et al. (US 6,436,591) in view of Wolk et al. (US 6,291,126). Claims 11-13, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsu in view of Wolk, as applied to claims 1-10, 20, 22 above, and further in view of Chung (US 6,426,590). Claim 14 is rejected under 35

U.S.C. 103(a) as being unpatentable over Ohtsu in view of Wolk and Chung, as applied to claims 11-13, 19 above, and further in view of Jones (US 5,672,938). Claims 16, 18, 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsu in view of Wolk, Chung and Jones, as applied to claim 14 above, and further in view of Boroson et al. (US 6,226,890). Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsu in view of Wolk, Chung and Jones, as applied to claim 14 above, and further in view of Yamada et al. (US 5,583,675). These rejections represent clear error, as the Examiner has failed to establish a prima facie case of obviousness.

Regarding claim 1, the Examiner states that Ohtsu teaches a conductive color filter (column 7, lines 20-30), comprising a light-transmitting conductive layer 7 (film) (column 16, lines 55-60) in Fig. 4B of Ohtsu, which can be a conductive carbon material (column 16, lines 65-68), covered by a layer 15(B, G, R) of colored polymeric resin binder (acrylate resin with a colorant) (column 9, lines 45-50). The Examiner further states that Ohtsu teaches that the light-transmitting conductive layer 7 is a conductive carbon material (column 16, lines 63-68), but fails to disclose that the light-transmitting conductive carbon material is composed of carbon nanotubes. The Examiner then cites Wolk as teaching that carbon nanotubes are used as a conductive layer (column 14, lines 15-20) in display devices (column 1, lines 60-68), and alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used carbon nanotubes as the light-transmitting conductive carbon material of Ohtsu in order to obtain the desired conductivity, because Wolk teaches that carbon nanotubes is used as a conductive layer in display devices.

This rejection is traversed, and believed to be in clear error, for at least the following reasons. First, the Examiner's interpretation of the teachings of Ohtsu is in error. Rather than teach a conductive color filter comprising a light-transmitting conductive layer 7 (film), which can be a conductive carbon material, covered by a layer 15(B, G, R) of colored polymeric resin binder (acrylate resin with a colorant) as alleged, Ohtsu actually describes a light-transmitting conductive film 6 (which can use a conductive carbon material), under a photoconductive thin film 7, with photoconductive thin film 7 covered by a layer 15(B, G, R) of colored polymeric resin binder. Possible materials for photoconductive thin film 7 are described at col. 17, lines 27-39, and do not

include conductive carbon materials. Thus, the cited sections of Ohtsu do not teach covering a layer of conductive carbon materials with a layer of colored polymeric resin binder, and even if conductive carbon nanotubes of Wolk were to be substituted for conductive carbon materials in light-transmitting conductive film (layer 6) of Ohtsu, the present invention would not be obtained.

While Ohtsu does disclose a method of making a conductive color filter, Ohtsu teaches using a photoconductor and an electrodeposition technique. In such process, an electrolyte including ionic material, a water soluble polymer, and a colorant and a conductive material (which may be the same material) is electrodeposited to form the conductive color filter layer 15. The present invention is distinguished by forming a conductive color filter comprising a layer of carbon nanotubes covered by a layer of colored polymeric resin binder. Even if one were to alternatively substitute or add carbon nanotubes of Wolk to the electrolyte of Ohtsu et al, the present invention would not be obtained, as there is no teaching or suggestion in Ohtsu or Wolk to form a conductive color filter by separately depositing a layer of any conductive material followed by a layer of colored resin coated thereon. To the contrary, carbon nanotubes are not ionic materials, and formation of a layer of such conductive material absent the other required electrolyte components would therefore not be compatible with the described electrodeposition technique. The present invention enables the advantages of being able to initially coat a conductive layer of non-colored carbon nanotubes employing known techniques, and also enabling subsequent formation of conductive colored filters by selective deposition of a colored resin binder, which avoids the complication of an electrodeposition technique.


Further, the proposed combination of references would in any event not be obvious to the artisan, as Ohtsu is specifically directed towards manufacture of a conductive color filter employing an electrodeposition process for the deposition of a conductive electrodeposition material containing a coloring material upon a photoconductive thin film, while Wolk is specifically directed towards patterning techniques employing a thermal transfer process. There is simply no teaching, disclosure or suggestion identified by the Examiner that materials deposited by the thermal transfer process of Wolk would be suitable for use in an electrodeposition process in accordance with Ohtsu.

Finally, the proposed combination does not establish a prima facie case of obviousness as the Examiner has not identified any reasonably pertinent motivation based on the teachings of Wolk which would direct one skilled in the art to modify the process of Ohtsu to obtain the claimed invention. The alleged motivation stated by the Examiner for the proposed modification is "because Wolk teaches that carbon nanotubules is used as a conductive layer in display devices". While this might be motivation for one skilled in the art to use carbon nanotubes as the conductive layer 6, it is not motivation employ a layer of carbon nanotubes covered by a layer of colored polymeric resin binder to form an actual conductive color filter, such as layer 15 of Ohtsu.

The further cited references do not overcome the basic deficiency of the teachings of Ohtsu and Wolk with respect to the present claimed invention, and a prima facie case of obviousness has accordingly not been established. Dependent claims 2-14, 16, and 18-24 (as well as objected-to dependent claims 15 and 17) are therefore believed patentable for at least the same reasons as independent claim 1. The final rejections thus clearly are in error for at least the reasons asserted above, and a prompt and favorable action in response to this request is earnestly solicited.

Additional notes: (1) Withdrawn non-elected process of making claims 25 and 29 include all the limitations of product claim 1. Accordingly, rejoinder of such withdrawn claims, and claims 26-28 and 30-31 dependent thereon, upon allowance of elected product claim 1 is further respectfully requested. (2) Box 10 of the Office Action Summary indicates that the drawings filed on 03 October 2004 are objected to by the Examiner, but no explanation of such objection is set forth. It is in any event noted that the present application drawings were filed 01 October 2003, with the original application filing.

Respectfully submitted,



Attorney for Applicant(s)
Registration No. 33,564

Andrew J. Anderson/vjr
Rochester, NY 14650
Telephone: (585) 722-9662
Facsimile: (585) 477-1148